

## REMARKS

This continuation application addresses rejections set forth in the Office Action dated 12/19/2002 of the parent application (hereafter referred to as the Office Action).

Referring to claim 3, the rejection over Fukase and Jeng '687 is improper for lack of motivation. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, e.g., MPEP §2143 (8<sup>th</sup> ed.).

The bald, cursory statements of the Office Action fail to provide requisite motivation to combine reference teachings. In particular, page 5 of the Office Action baldly states the combination is appropriate for the purpose of electrically connecting sources and drains to bit lines and capacitors. Applicant disagrees.

The indicated motivation may only be proper if Fukase fails to disclose appropriate electrical connections of sources and drains to bit lines and capacitors. There is absolutely no evidence that Fukase is devoid of teaching appropriate electrical connections upon which the motivation is based. In particular, a bit contact 5 and contact within contact hole 9 is already clearly disclosed by Fukase. That is, Fukase already includes teachings for which one would allegedly be motivated to combine the teachings of Jeng '687. Accordingly, the alleged motivation is nonsensical inasmuch as one of ordinary skill in the art having before him the teachings of Fukase providing appropriate connections would not look to Jeng '687 for redundant additional teachings regarding the same subject matter

adequately disclosed by Fukase. There is no evidence the Fukase electrical contact teachings are insufficient or that one would be motivated to combine the reference teachings apart from improper reliance upon Applicant's disclosure.

Additionally, the Fukase and Jeng '687 are directed towards different constructions and one would not be motivated to combine the inapposite reference teachings. Fukase teachings forming hole 9 through layers 7A and 7B after the bit line has been formed. Jeng '687 teaches forming the contacts before formation of the bit line. The inapposite electrical connection teachings of Fukase and Jeng '687 further illustrate the lack of motivation and clear improper hindsight reliance upon Applicant's disclosure in support of the obviousness rejection.

The Federal Circuit discussed proper motivation *In re Lee*, 61 USPQ 2d 1430 (Fed. Cir. 2002). The motivation identified in the Office Action is akin to the conclusory statements set forth in *In re Lee* which were found to fail to provide the requisite motivation to support an obviousness rejection. The Court in *In re Lee* stated the factual inquiry whether to combine references must be through and searching. It must be based on objective evidence of record. The Court in *In re Fritch*, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992) stated motivation is provided only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. The Lee Court stated that the Examiner's conclusory statements in the Lee case do not adequately address the issue of motivation to combine. The Court additionally stated that the factual question of motivation is material to patentability and can not be resolved on subjective belief and unknown authority. The Court also stated that deficiencies of cited references cannot be

remedied by general conclusions about what is basic knowledge or common sense. The Court further stated that the determination of patentability must be based on evidence.

In the instant case, the record is entirely devoid of any evidence to support motivation to combine the teachings apart from the bald conclusory statements of the Examiner which are insufficient for proper motivation as set forth by the Federal Circuit. The Office cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims but must set forth rationale on which it relied. Statements set forth in the present Office Action are akin to the alleged motivation discussed *In re Lee* and accordingly are insufficient to combine the reference teachings. The 103 rejection of claim 3 is improper without the proper motivation and Applicant respectfully requests allowance of claim 3 in the next action.

The claims which depend from independent claim 3 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, claim 4 recites at least a portion of the contact opening being self-aligned to said bit line. Contrary to the MPEP and the CFR, the Office Action fails to identify any teachings of Fukase or Jeng '687 which allegedly disclose or suggest any self-alignment teachings let alone the claimed at least a portion of the contact opening being self-aligned to a bit line. The teachings in col. 1 of Fukase relied upon in the Office Action merely state hole 9 is formed to penetrate through films 7A, 7B. **Such teachings are clearly devoid of any disclosure or suggestion of the claimed self-alignment.** Jeng '687 discloses formation of bit lines 24, 42 after the formation of the holes. Accordingly, Jeng '687 in no fair interpretation discloses etching a contact opening **generally self-**

aligned to said bit line as positively claimed inasmuch as Jeng '687 only discloses formation of the bit line after formation of the hole. Further, Jeng '687 provides no disclosure of etching the self-aligned contact opening through *two separately-formed insulative material layers* as specifically claimed. Numerous positively-recited limitations of claim 4 are not shown nor suggested and claim 4 is allowable for at least this reason.

In the event that a rejection of claim 4 is maintained with respect to the prior art, or a new rejection made, Applicants respectfully request identification *in a non-final action* of elements which allegedly correspond to limitations of the claims in accordance with 37 C.F.R §1.104(c)(2). In particular, 37 C.F.R §1.104(c)(2) provides that *the pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified*. Further, 37 C.F.R. §1.104(c)(2) states that the Examiner must cite the best references at their command. When a reference is complex or shows or describes inventions other than that claimed by Applicants, the particular teachings relied upon must be designated as nearly as practicable. The pertinence of each reference if not apparent must be clearly explained for each rejected claim specified. Applicants respectfully request clarification of the rejections with respect to specific references and specific references teachings therein pursuant to 37 C.F.R. §1.104(c)(2) *in a non-final Action* if claim 4 is not found to be allowable.

Referring to claim 5, the prior art fails to disclose or suggest any self-alignment of a contact opening with respect to a bit line. The prior art also fails to disclose or suggest self-alignment of the contact opening with respect to a bit line and a word line as recited in claim 5. Numerous limitations of claim 5 are not shown nor suggested by the prior art and claim 5 is allowable for at least this reason. Applicant requests identification of specific

reference teachings of the prior art in compliance with the CFR and the MPEP in a non-final action if claim 5 is not allowed.

Turning now to independent claim 11, it is defined that *the etching the opening through a first insulative material is substantially selective relative to the second insulative material in a self-aligning manner relative to both the bit line and the word line.*

As mentioned previously, Fukase fails to disclose or suggest any self-alignment of the contact hole 9 with respect to a bit line and a word line using selective etching. Fukase baldly discloses the hole 9 penetrating layers 7A and 7B with no selective etching or self-alignment teachings. Jeng '687 refers to *formation of the holes prior to formation of the bit lines* 24, 42. Accordingly, Jeng '687 is devoid of etching the opening in a self-aligning manner relative to the bit line as claimed. Jeng '338 teachings in col. 5 are further relied upon in support of the rejection. The identified Jeng '338 teachings disclose forming holes within layers 28, 30 prior to the formation of bit lines 4. Accordingly, Jeng '338 in no fair interpretation discloses etching the opening in a self-aligning manner relative to a bit line as positively claimed. Accordingly, the references taken alone or in combination fail to teach or suggest positively-recited limitations of claim 11 and claim 11 is allowable for at least this reason. Applicant requests identification of specific reference teachings of the prior art in compliance with the CFR and the MPEP in a non-final action if claim 11 is not allowed.

Still referring to the rejection of claim 11, there is no motivation to combine Jeng '687 with the teachings of Fukase and the 103 rejection is improper for at least this additional reason.

Further, there is no motivation to combine the teachings of Jeng '338 in support of

the obviousness rejection of claim 11. On page 6 of the Office Action, it is stated that the combination is proper for the purpose of forming bit line contact openings in the insulation layers to the source/drain areas. However, both Fukase and Jeng '687 clearly disclose the formation of contact openings in insulation layers to source/drain areas. The motivational rationale is redundant in view of the express teachings of the Fukase and Jeng '687 and one would not be motivated to look to Jeng '338 for meaningful teachings. The motivational rationale is conclusory and in view of *In re Lee* is insufficient to sustain a proper obviousness rejection. Applicant respectfully requests allowance of claim 11 in the next Action for at least these numerous reasons.

The claims which depend from independent claim 11 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Referring to independent claim 24, etching through first insulative material relative to second insulative material covering portions of the bit lines is recited. Fukase disclosed forming a hole through layers 7A, 7B with no selectivity. Jeng '687 and '338 disclose etching holes prior to formation of bit lines. Accordingly, the combined reference teachings fail to disclose any selective etching relative to insulative material covering already formed bit lines. The prior art taken alone or in combination fails to disclose or suggest positively-recited limitations of claim 24 including the selective etching after the forming the bit lines. Accordingly, even if the references are combined, such combination fails to render claim 24 obvious and claim 24 is allowable. Applicant requests identification of specific reference teachings of the prior art in compliance with the CFR and the MPEP in a non-final action if claim 24 is not allowed.

There is no motivation to combine the teachings of Jeng '687 or Jeng '338 with Fukase. The 103 rejection of claim 24 is improper for at least this additional reason.

The claims which depend from independent claim 24 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Referring to independent claim 25, the prior art reference teachings, taken alone or in combination, fail to disclose or suggest selectively etching through first insulative material relative to second insulative material covering portions of the bit lines and the word lines after the forming the bit lines as defined in claim 25. Positively-recited limitations of claim 25 are not shown nor suggested by the prior art and claim 25 is allowable for at least this reason. Applicant requests identification of specific reference teachings of the prior art in compliance with the CFR and the MPEP in a non-final action if claim 25 is not allowed.

There is no motivation to combine the teachings of Jeng '687 or Jeng '338 with Fukase. The 103 rejection of claim 25 is improper for at least this additional reason.

Referring to independent claim 29, the deficiencies of Fukase are acknowledged on page 6 of the Action. Thereafter, teachings of Jeng '338 are relied upon as disclosing selective etching. The alleged selective etching teachings of Jeng '338 fail to disclose or suggest limitations of claim 29. The etching of Jeng '338 is with respect to the formation of holes prior to any formation of a bit line and accordingly fail to disclose or suggest etching openings self-aligned to bit lines. Jeng '687 etches holes before forming the bit lines and Fukase discloses no selective etching or self-alignment teachings. Even if the references are combined, the combination fails to disclose or suggest any selective etching

of contact openings through insulative material relative to insulative material over the bit lines and insulative material over the word lines, the openings being self-aligned to both bit lines and word lines. Positively-recited limitations of claim 29 are not shown nor suggested and claim 29 is allowable.

There is no motivation to combine the teachings of Jeng '687 or Jeng '338 with Fukase. The 103 rejection of claim 29 is improper for at least this additional reason.

With respect to independent claim 36, only Fukase relates to etching holes after the bit lines are formed. Fukase discloses penetration through plural layers 7A, 7B and fails to disclose or suggest and selective etching relative to the insulative coverings. Further, Fukase fails to disclose or suggest the claimed insulative coverings. Jeng '687 discloses inapposite teachings from Fukase of etching holes prior to the formation of bit line structures. Even if the references are combined, there is no teaching or suggestion of the claimed selective etching relative to the insulative coverings formed over portions of both the bit lines and the word lines after forming the bit lines as explicitly defined. The 103 rejection of claim 36 is in error for at least this reason, and Applicant requests allowance of claim 36 in the next Action.

There is no motivation to combine the teachings of Jeng '687 with Fukase. The 103 rejection of claim 36 is improper for at least this additional reason.

The claims which depend from independent claim 36 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Referring to independent claim 43, there is no motivation to combine the teachings of Jeng '687 or Jeng '338 with the teachings of Fukase. The bald, cursory, and redundant

motivational rationale provided in the Office Action only results from Applicant's disclosure and is insufficient to support the 103 rejection. Claim 43 is allowable for at least this reason.

The claims which depend from independent claim 43 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Referring to independent claim 44, there is no motivation to combine the teachings of Jeng '687 or Jeng '338 with the teachings of Fukase. The bald, cursory, and redundant motivational rationale provided in the Office Action only results from Applicant's disclosure and is insufficient to support the 103 rejection. Claim 44 is allowable for at least this reason.

Referring to independent claim 45, the prior art teachings taken alone or in combination fail to teach or suggest the claimed forming the bit line, and forming the capacitor plug comprising substantially selectively etching an opening into first insulative material relative to second insulative material over the bit line. The prior art is devoid of any selective etching after the forming of the bit line or selective etching first material relative to insulative material over the bit line and the Office Action has failed to identify any teachings which allegedly disclose or suggest such claim limitations. Limitations of claim 45 are not shown nor suggested and claim 45 is allowable.

There is no motivation to combine the reference teachings. Claim 45 is allowable for at least this additional reason.

The claims which depend from independent claim 45 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their

own respective features which are neither shown nor suggested by the cited art.

Referring to independent claim 48, the prior art taken alone or in combination fails to teach or suggest forming a bit line, forming insulative material over the bit line, and selective etching contact openings through insulative material relative to the insulative material over the bit line after the forming the bit line and the insulative material over the bit line. Further, the prior art teachings taken alone or in combination fail to teach or suggest the opening self-aligned to both bit lines and word lines. The teachings of Jeng '687 or '338 identified in the Office Action as allegedly disclosing claimed self-alignment aspects are inapplicable inasmuch as such refer to etching before formation of a bit line. Limitations of claim 48 are not shown nor suggested by the prior art and claim 48 is allowable.

There is no motivation to combine the reference teachings. Claim 48 is allowable for at least this additional reason.

Claim 49 recites a word line elevationally below the bit line, and the extending comprises etching a contact opening through insulative material and generally self-aligned to both said bit line and said word line. Claim 49 includes limitations of previous claim 53. Contrary to the MPEP and CFR, no teachings of Lee have been identified which allegedly disclose or suggest the claimed word line or self-alignment of the contact opening to the word line or a bit line. Limitations of claim 49 are not shown nor suggested by the prior art and claim 49 is allowable for at least this reason. Applicant requests identification of specific reference teachings of the prior art in compliance with the CFR and the MPEP in a non-final action if claim 49 is not allowed.

The claims which depend from independent claim 49 are in condition for allowance

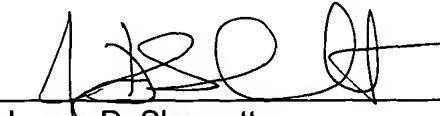
for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Support for the new claims may be found at least in Figs. 12 and 17 and related specification teachings of the originally-filed application.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: 7/3/13

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